

65 to 95 percent of its initial viscosity within 7 minutes of shearing at 0.1 sec⁻¹.

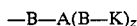
The melt temperature of the 2 percent collagen solution as determined by Differential Scanning Calorimetry is about 34° to 37° C.

What is claimed is:

1. A chemically-modified collagen compound which comprises at least two native collagen molecules which are coupled at least one lysine epsilon amino group present on each said collagen molecule by a coupling group, said coupling group comprising at least two moieties selected from the group consisting of carbonyl and sulfonyl groups, and wherein at least a portion of the lysine epsilon amino groups which are not linked to said coupling groups are linked to amine-modifying groups, which amine-modifying groups are selected from the group consisting of saturated or unsaturated alkane sulfonamide and carboxamide groups, arene sulfonamide and carboxamide groups and mixed saturated or unsaturated alkane-arene sulfonamide and carboxamide groups, which amine-modifying groups have between about 2 and 20 carbon atoms wherein said amine-modifying group may also contain up to 5 heteroatoms selected from the group consisting of oxygen, sulfur and nitrogen, and may be substituted in available aromatic and aliphatic positions by halogens, carboxyl groups, and alkyl and alkoxy groups having about 1 to 4 carbon atoms.

2. The chemically-modified collagen compound of claim 1 wherein at least about 60 percent of the lysine epsilon amino groups which are not linked to said coupling groups are linked to said amine-modifying groups.

3. The chemically-modified collagen compound of claim 1 wherein said amine-modifying group has the general formula:



wherein

z is 0, 1 or 2;

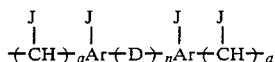
B is independently CO, SO₂ or combinations thereof;

K is OH; and

A is selected from the group consisting of:

(1) an aromatic group having about 6 to 20 carbon atoms;

(2)



wherein

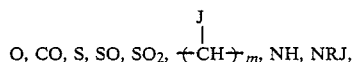
Ar is independently selected from the group consisting of an aromatic ring having 6 to 10 carbon atoms, a heteroaromatic ring containing atoms selected from the group consisting of C, N, O and S, and having about 5 to 10 atoms, or combinations thereof;

J is hydrogen;

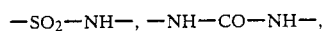
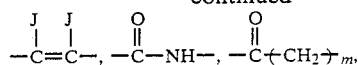
n is 0 or 1;

a is 0 or an integer having a value of between about 1 and 4; and

D is independently selected from the group consisting of



-continued



wherein m is an integer having a value of between about 1 and 3, R is selected from the group consisting of phenyl, and a straight or branched chain alkyl or acyl group having 1 to 4 carbon atoms; and

J is hydrogen;

(3) an aromatic group having about 6 to 10 carbon atoms, wherein said aromatic group may be substituted in available positions by J wherein J is hydrogen;

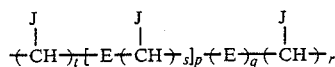
(4) a heteroaromatic group containing atoms selected from the group consisting of C, N, O and S, and having from about 5 to 14 ring atoms, wherein said heteroaromatic group may be substituted in available positions by J, wherein J is hydrogen;

(5) an aliphatic or arylaliphatic chain which contains one or two olefinic or acetylenic groups and which contains about 2 to 20 carbon atoms, wherein said chain may be substituted in available positions by J, wherein J is hydrogen;

(6) an alicyclic ring which may be partially unsaturated, having about 3 to 15 carbon atoms, wherein said alicyclic ring may be substituted in available positions by J wherein J is hydrogen;

(7) a heterocyclic ring which may be saturated or unsaturated and which contains atoms selected from the group consisting of C, N, O and S, and which has from about 5 to 12 ring atoms, wherein said heterocyclic ring may be substituted in available positions by J wherein J is hydrogen;

(8)

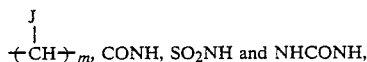


wherein

t is an integer having a value of between about 1 and 8;

E is independently selected from the group consisting of

O, NRJ, S, SO, SO₂, CO,



wherein R is as defined hereinabove, and m is an integer having a value of between about 1 and 3;

J is hydrogen;

s is an integer having a value of between about 2 and 8;

p is 0 or an integer having a value of between about 1 and 4;

q is about 0 or 1; and

r is 0 or an integer having a value of between about 1 and 8, provided that when q is 1, r is greater than 0; and